

Remarks/Arguments

The Examiner has rejected claims 15, 16, 22-26, 31 and 32 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and to distinctly claim the subject matter which applicant regards as the invention. In rejecting the claims the Examiner urges that the phrase "and/or" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. In this regard the Examiner directs applicant's attention to MPEP §2173.05(d). Applicant has carefully considered this rejection but it is most respectfully traversed for the reasons discussed below.

Contrary to the Examiner's observation, MPEP §2173.05(d) does not prohibit the use of the phrase "and/or" in the claims. Instead, MPEP §2173.05(d) only refers to indefiniteness associated with exemplary claim language such as "for example" and "such as". Thus, it is clear that the phrase "and/or" is not associated with any indefiniteness. In this regard it is to be noted that the term "and/or" appears in the claims of 103,818 U.S. patents which issued from 1976 to March 9, 2004.

The term "and/or" is conventionally used to cover alternative embodiments. For example, the term "and/or" in claim 15 is used to cover the embodiment wherein at least 80 weight percent of the carbohydrates/saccharides of the carbohydrate components A and B promote lactic acid bacteria **and** are bifidogenic and also covers the embodiment wherein at least 80 weight percent of the carbohydrates/saccharides of carbohydrate components A and B promote lactic acid bacteria **or** are bifidogenic. Accordingly, claim 15 has been amended so that both alternatives are covered by the claim. The same reasoning applies to the remaining claims rejected under 35 USC 112, second paragraph. Accordingly, these remaining claims have been similarly amended.

The Examiner has rejected claims 14-32 under 35 USC 103(a) as being unpatentable over Green et al. in view of Paul. Applicant has carefully considered this rejection but it is most respectfully traversed for the reasons discussed below.

The Examiner used this same combination of references to reject claim 13 in the Office Action dated March 15, 2002 (Paper No. 7) and maintained this rejection of claim 13 in the final Office Action dated December 3, 2002 (Paper No. 10). However, the Examiner did not apply this combination of references to claim 14 in the aforementioned previous Office Actions because claim 14, unlike claim 13, uses the narrow transition phrase "consists of" whereas claim 13 used the more broad transition phrase "comprises". The narrower transition phrase "consists of" means that the composition must contain each of the recited ingredients **but cannot contain any other ingredients except as incidental impurities**. It will be recalled that the cited references were not applicable to the claims which use the transition phrase "consists" since the prior art references require the presence of additional components which are not recited in these claims.

The Examiner has apparently ignored the fact that claim 14 states that the composition is "characterized in that said mixture **consists of** two different...". Although claim 14 as presently amended further permits the inclusion of a nutritive carbohydrate selected from the group consisting of lactose, maltodextrine and starch, the claim still excludes the presence of further components required by the cited references and is thus patentably distinguished over these references. Accordingly, claim 14 is distinguished over the cited references on this basis alone.

Furthermore, in the paragraph bridging pages 3-4 of the Office Action, the Examiner sets forth the limitations of the claims which she considered in applying the prior art. However, it is clear from the Examiner's characterization of the claims in the paragraph bridging pages 3-4 of the Office Action that she has not considered all of the limitations of the claims. In particular, claim 14 requires that carbohydrate components

A and B are different from one another in two important aspects. Firstly, carbohydrate component A cannot have more than six monosaccharide units therein and carbohydrate component B has at least seven monosaccharide units therein up to a maximum of 100 monosaccharide units. Thus it is clear from the language of claim 1 that carbohydrate components A and B are of **different size**. In addition, claim 14 also requires that carbohydrate component A has a **different structure** than carbohydrate component B. Since the recitation of the different structure is in addition to the above-described difference in size between components A and B, it is clear that components A and B differ in size as well as structure. In other words, in addition to differences attributed to the number of monosaccharide units contained in the components, these components also have additional structural differences.

The above-noted differences in terms of both size and structure are self-evident from the previous versions of claim 14. However, applicant has amended claim 14 to particularly recite this feature which was clearly inherent or at least implicit from the earlier versions of claim 14. Thus claim 14 presently recites that "the carbohydrates/saccharides of carbohydrate component A **have a different structure and a different size** than the carbohydrates/saccharides of carbohydrate component B.

With respect to the aforementioned differences in size and structure, the Examiner's attention is directed toward the paragraph bridging pages 8-9 of the specification wherein it is stated that although components A and B primarily differ in size, mixtures which are particularly efficient also require that component A and component B are of a different structure. Examples of differences in structure are provided in this same paragraph. For example, differences in structure may pertain to the glycosidic bonding. For example, one component may be α -galacto oligosaccharides while the other component may be β -galacto oligosaccharides. It is also noted in the first full paragraph on page 9 of applicant's specification that the aforementioned structural difference may mean that the two components belong to two

different "classes" of carbohydrates. The above-noted differences in structure between components A and B is claimed in new claims 33 and 34. Of course, as noted above, claim 14 requires that components A and B have a different structure and a different size without limiting the differences in structure to the differences noted in new claims 33 and 34.

It is clear from the Examiner's characterization of claim 14 in the paragraph bridging pages 3-4 of the Office Action that the Examiner has not considered this limitation in evaluating the patentability of the claimed invention.

Furthermore, in the Examiner's characterization of the invention as set forth on pages 3-4 of the Office Action, the Examiner has failed to note another important distinction of applicant's invention. In particular, the Examiner has ignored the limitation of claim 14 which requires that **at least 80 weight percent** of the carbohydrates/saccharides of the carbohydrate components A and B have a prebiotic effect (see the last two lines of the previous version of claim 14). It is possible that the Examiner may interpret the above-noted limitation to mean that 80 percent of the total amount of components A and B have a prebiotic effect. However, this portion of claim 14 was intended to mean that 80 weight percent of the carbohydrates/saccharides of carbohydrate component A have a prebiotic effect and 80 weight percent of the carbohydrates/saccharides of the carbohydrate component B have a prebiotic effect, as set forth in the Description of the Preferred Embodiment in the paragraph bridging pages 4-5 of applicant's specification wherein it states "preferably, at least 80 weight percent of the carbohydrates belonging to carbohydrate component A, and also at least 80 weight percent of those belonging to carbohydrate component B, have a prebiotic effect."

Applicant submits that the Examiner must consider all of the claimed limitations including the above-discussed limitation requiring a difference in size and structure of components A and B as well as the above-discussed limitation which requires that 80

percent of the carbohydrates of component A as well as 80 percent of the carbohydrates of component B must have the prebiotic effect.

Applicant submits that the prior art fails to disclose or suggest either of these two limitations. In this regard it is to be noted that column 2, lines 1-6, of Green et al. describes three components of their composition. One of the components is an insoluble non-starch polysaccharide which obviously cannot correspond to applicant's components A or B since components A and B in applicant's invention are soluble. Thus, the remaining two components mentioned in column 2, lines 1-6 (an oligosaccharide component and a non-starch polysaccharide component) must be the components which correspond to applicant's components A and B. However, Green et al. fail to make any provision for assuring that these two components differ both in size and structure. In this regard it is to be noted that Green et al. state that the oligosaccharide component may comprise **any saccharide** containing at least two and up to twenty monosaccharide units, whether a starch (α -glucan) or non-starch type (see column 3, lines 4-7). Thus, it is clear that since Green et al. can use any saccharide for the oligosaccharide component, Green et al. fail to disclose or suggest that this component must differ from the other component in terms of a structural difference in addition to a difference in size.

In view of the above, it is clear that the cited references do not disclose or suggest all of the claimed features of applicant's invention.

In rejecting the claims the Examiner urges that the only difference between the subject matter of Green et al. and the subject matter of applicant's invention lies in the difference in concentration with respect to carbohydrate components A and B (see the first paragraph on page 5 of the Office Action).

Applicant most respectfully disagrees with the above characterization of the differences between applicant's invention and the prior art. The core of applicant's invention resides in a combination of **several features**.

Firstly, as discussed above, two carbohydrate components of different chain length have to be present.

Secondly, not only at least 80 weight percent of the carbohydrates/saccharides of carbohydrate component A have to have a prebiotic effect, but also at least 80 weight percent of the carbohydrates/saccharides of carbohydrate component B have such a prebiotic effect. As discussed above, claim 14 has been amended to clarify this aspect of applicant's invention in the event that it was not properly understood from the original wording of claim 14.

Since the carbohydrates used as carbohydrate component A and also as carbohydrate component B have to have a prebiotic effect, it should be clear that applicant is not claiming the prebiotic effect of the carbohydrates since the functional requirement is a prerequisite for choosing the appropriate carbohydrates.

Green et al. fail to disclose or suggest the above-noted choice of appropriate carbohydrates. In fact, not all of the saccharides as taught by Green et al. can be used in applicant's invention. In this context applicant directs the Examiner's attention to page 4, last paragraph of the Office Action. There it is pointed out that as far as component B is concerned, Green et al. discloses a composition, which may contain pectin among other ingredients. In this context it must be noticed that pectin generally contains at least 200 monomeric units so that it cannot be considered as carbohydrate component B of applicant's invention since carbohydrate component B of applicant's invention contains a maximum of 100 monosaccharide units. This analysis also applies to the other non-starch polysaccharides mentioned in column 2, lines 47-59 of Green et al. In this context for instance gum arabic can be mentioned.

Furthermore, applicant wishes to point out that Green et al. teaches in column 2, lines 47-59 that inulin may be used. Inulin is a polysaccharide which consists mainly of fructose units. However, the inulin normally used is a mixture of polysaccharides of different chain length (i.e., the number of fructose units varies) and therefore comprises both short chain carbohydrates as well as long chain carbohydrates. Even if one would argue now that some of the carbohydrates belonging to inulin would constitute a carbohydrate component A and the others would constitute a carbohydrate component B, it has to be emphasized that the short chain carbohydrates (carbohydrate component A) and the long chain carbohydrates (carbohydrate component B) **have the same structure** since, as discussed above, inulin is a polysaccharide mainly consisting of fructose units whereby the polysaccharides only differ in chain length, not both structure and chain length as required in applicant's invention.

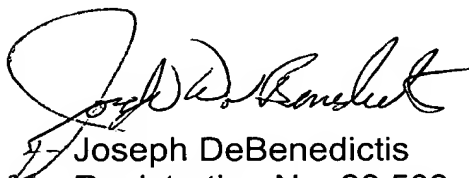
In view of the above, applicant submits that the carbohydrate mixture of claim 14 is clearly patentably distinguished over the cited references.

Lastly, as discussed above, claim 14 has been amended to allow the optional inclusion of at least one nutritive carbohydrate selected from the group consisting of lactose, maltodextrine and starch. Support for this limitation is found in the paragraph bridging pages 12-13 of the specification wherein it is stated that the inventive mixtures may be present in various nutritional products and, in particular, it is stated that the inventive mixture may replace a part of other components found in these nutritional products, such as lactose, maltodextrine or starch. It is also clear from this same paragraph that the inventive mixture may be added to these nutritional components which contain lactose, maltodextrine or starch and thus it is self-evident that these components (lactose, maltodextrine or starch) may be part of the claimed mixture.

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In view of the above arguments and amendments to the claims, applicant respectfully requests reconsideration and allowance of all of the claims which are currently pending the application.

Respectfully submitted,



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